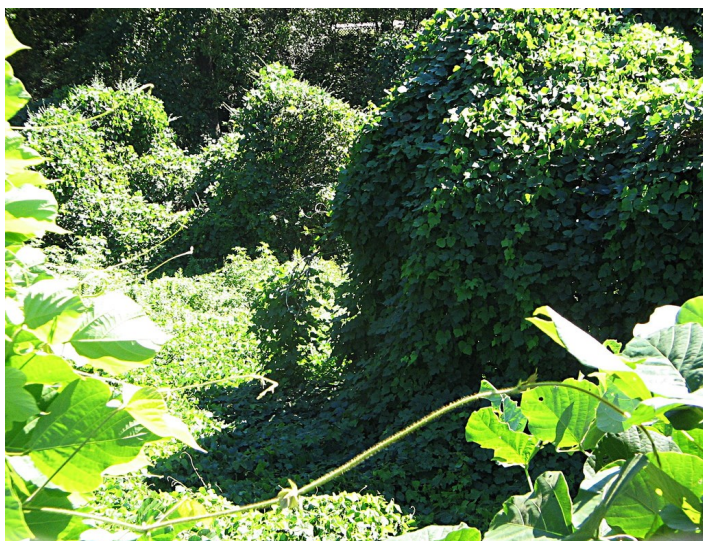


Invasive Species and the Military

Invasive Species Impacts

Invasive species are non-native plants and animals that out-compete native species. Invasive species cause more than \$138 billion in annual damage and management costs in the U.S. alone. Worldwide, the cost is equivalent to five percent of the global economy. These species also can impact the U.S. Department of Defense's (DoD) ability to conduct its testing, training, and deployment missions by taking over training lands, injuring soldiers, damaging equipment, and overwhelming listed and at-risk species. Battling invasives can significantly erode natural resources and training budgets.



Afrosweide, "Kudzu" October 15, 2006 via Flickr, Creative Commons Attribution.

Preventative Measures in Place

DoD natural resources managers have a number of safeguards in place to prevent accidental introductions and dispersal of invasives. The Army Corps of Engineers provides educational materials about invasives and how to treat them; the Armed Forces Pest Management Board has detailed guidance on a number of invasives issues; military health and safety personnel regularly conduct briefings and work to educate personnel; and natural resources managers plan, budget, and execute invasives control in installation Integrated Natural Resources Management Plans.

¹ Pimentel, D., R. Zuniga and D., Morrison. 2005. Update on the environmental and economic costs associated with alien-invasive species in the United States. *Ecological Economics* 52: 273–288.

² The Nature Conservancy. *Protecting Native Plants and Animals; Taking on the Invaders*. April 2010. www.nature.org/initiatives/invasivespecies/.

Funding

From FY1991 to FY2009, the DoD Legacy Resource Management Program (Legacy) has funded nearly 120 invasive species-related projects totaling approximately \$16.7 million. The DoD Strategic Environmental Research and Development Program (SERDP) began funding invasive species research in FY2000, resulting in 18 projects totaling \$16.3 million. The DoD Environmental Security Technology Certification Program (ESTCP) funded a \$1.5 million brown treesnake control project on Guam in FY2009.

Educate and Inform...

DoD Invasive Species Outreach Toolkit

This Toolkit offers information to help prevent the loss of realistic training lands that provide access to materials that can enhance management decisions at all levels, and help DoD's natural resources managers educate leadership, servicemen, and civilians about what they can do to help fight the spread of invasive species. The Toolkit includes educational tools to reach a variety of audiences, including commanders, soldiers/residents, and the general public. It features a *Commander's Guide on Invasive Species*, modifiable PowerPoint presentation templates, a radio public service announcement (PSA) template, and a list of relevant online resources. It also provides templates and samples of brochures, posters, and reference cards for vertebrates, insects, aquatics, and weeds. Links to useful websites, fact sheets, reports, and training opportunities also are available. The Toolkit is accessible at: <http://dodinvasives.org/>.



Dean Croshere, "Fire Ants" September 25, 2009 via Flickr, Creative Commons Attribution.



Enabling the Mission, Defending the Resources
Department of Defense Natural Resources Program



Snakehead Fish
Photo: New York Government

Invasive Species Introductions

Major pathways for introducing non-native species are expanding -- mainly from increased trade and travel, the spread of urban and rural populations into previously undisturbed areas, and more frequent and more severe ecological disturbances resulting from climate change (e.g., more severe droughts, floods, other natural disasters). Non-native invasives generally have no significant predators or pathogens to control them and keep their numbers in check. This means they can spread rapidly and out-compete native species for food, shelter, or other resources.

DoD follows federal and state quarantine laws and regulations, and has policies and procedures in place at the installation level to ensure that tanks, other vehicles, and equipment are properly washed before transport, and that ballast water on ships is exchanged before entering port. These efforts



Brown Treesnake
Photo: USFWS

significantly reduce the spread of damaging invasive species, but some invasives still persevere. As a result, native species need more protection from harmful invaders that can infiltrate our borders regardless of the preventative measures in place.

Invasive species are sometimes so robust in new environments that they drive native species to the brink of extinction, which creates many problems for DoD. These issues include modifying training, tempo, equipment, and training locations; reducing training time; reducing training realism; increased costs; and potential lawsuits. It is best to manage invasive species through a management program that emphasizes early detection and rapid



Asian Tiger Mosquito
Photo: Centers of Disease Control and Prevention

response and coordinated, interagency approach that crosses jurisdictional boundaries, prevents duplication of effort, and focuses research and on-the-ground actions on species of highest concern in a holistic context. Ultimately, DoD can best focus its limited resources for invasives control by forming partnerships and working with others toward common goals.



Feral Hogs
Photo: Northern Territory Government

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